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THE NORTH CAROLINA
COLLEGE OF AGRICULTURE AND MECHANIC ARTS
AGRICULTURAL EXPERIMENT STATION DEPARTMENT
GEO. T. WINSTON, LL.D., DIRECTOR

Edible Mushrooms of North Carolina.

C. W. HYAMS,
UNDER THE DIRECTION OF W. F. MASSEY, HORTICULTURIST.

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THE NORTH CAROLINA COLLEGE OF AGRICULTURE AND MECHANIC ARTS

AGRICULTURAL EXPERIMENT STATION DEPARTMENT,

WEST RALEIGH, N. C.

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The Station is glad to receive any inquiries on agricultural subjects. *Address all communications to the Agricultural Experiment Station, and not to individuals.* They will be referred to the members of the Station staff most competent to answer them.

The N. C. Agricultural Experiment Station.
Division of Horticulture and Botany.
West Raleigh, N. C., December 1, 1900.

Sir:—I have the honor to herewith present for publication a popular description of the more common edible mushrooms found in North Carolina, and in doing so beg to call your attention to the fact that the list contains some thirty-odd varieties not heretofore credited to our State.

Respectfully,

C. W. Hyams,
Assistant Botanist and Entomologist.

Dr. Geo. T. Winston, *Director.*

LETTER OF TRANSMITTAL.

Dr. G. T. Winston, *Director.*

I herewith submit for publication a Bulletin on the Edible Fungi of North Carolina, prepared by my assistant, Mr. C. W. Hyams, and recommend its publication as a technical bulletin.

Respectfully,
W. F. Massey,
December 1, 1900.
Horticulturist.

Edible Mushrooms of North Carolina.

C. W. HYAMS, Assistant Botanist and Entomologist.

RULES FOR DETERMINING EDIBLE FUNGI.

Before passing to a description of the edible mushrooms treated of in this paper, I deem it necessary to give a few well-defined, reliable rules for the determination of such fungi. Under no circumstances should a single one of them be discarded by any but an expert collector.

(1) All fungi should be avoided when in the button or unexpanded stage.

(2) All fungi should be avoided in which the flesh has begun to decay, even if but slightly.

(3) All fungi should be avoided which have stalks with a swollen base enveloped with a sac-like or scaly envelope, more especially when the gills are white.

(4) All fungi having a milky juice, unless the milk is reddish, should be avoided.

(5) All fungi should be avoided in which the pileus, or cap, is thin when compared to the thickness of the gills, and in which the gills are nearly all equal in length, particularly if the pileus is bright colored.

(6) All tube-bearing fungi should be avoided whether the flesh changes color or not.

(7) All fungi should be avoided which have a flocculent ring or sort of spider-web round the upper part of the stalk.

(8) None of the popular (?) tests for distinguishing edible from poisonous fungi, such as, for example, the blackening of a silver spoon or coin, are reliable, and in fact are absolutely worthless and dangerous.

(9) Neither can any reliance be placed on the test, often used, of cooking the mushrooms in milk or vinegar. All such tests are unreliable, and common sense teaches us, and ought to warn us, not to eat any fungus supposed to contain an active poison which requires special treatment to remove it.

FOOD VALUE OF MUSHROOMS.

Speaking of the food values of fungi Rollrausch and Siegel state that "many species deserve to be placed beside meat as sources of

nitrogenous nutriment," and if their analysis is correct it fully bears out the above statement. They find in 100 parts of dried *Morchella esculenta* 35.18 per cent of protein, in *Helvella esculenta,* 26.31 per cent of protein, from 46 to 49 per cent of potassium salts and phosphoric acid, 2.3 per cent of fatty matter, and a considerable quantity of sugar. The nitrogenous values of different foods as compared with the mushroom are stated as follows: "Protein substances calculated for 100 parts of bread, 8.03; of oatmeal, 9.74; of barley bread, 6.39; of leguminous fruits, 27.05; of potatoes, 4.85; of mushrooms, 33.0." Measured by the above values it is safe to say thousands upon thousands of dollars worth of a desirable and delicious food goes to waste in this State annually.

COMPOSITION OF MUSHROOMS.

I am indebted to Dr. G. S. Fraps, Assistant Chemist, for the following analyses, made from carefully selected specimens found on the Experiment Station grounds.

AGARICUS CAMPESTER.

	Per Cent.
Moisture	96.850
Protein*	1.203
Fats	0.105
Ash	0.406
Nitrogen-free extract and Fiber	1.436

IN DRY MATTER, 100 PARTS.

	Per Cent.
Protein	38.07
Ether extract	3.33
Ash	12.91
Nitrogen-free extract	45.69
	100.00
Albuminoid nitrogen	26.10

* Contains proteids, .823.

LYCOPERDON CYATHIFORME.

	Per Cent.
Moisture	92.335
Protein*	3.654
Fats	0.262
Ash	0.558
Nitrogen-free extract and Fiber	3.191

IN DRY MATTER, 100 PARTS.

	Per Cent.
Protein	47.36
Ether extract	3.39
Ash	7.15
Nitrogen-free extract	42.10
	100.00
Albuminoid nitrogen	32.90

AGARICUS CAMPESTER. L.

Common Agaric.

Pileus silky or squamalose; lamellae at first a delicate pink, becoming brown, chestnut-brown or blackish brown with age; stem stuffed, glabrous, white, or whitish; spores elliptical. In very young plants the gills are concealed, but as the cap expands the veil or ring separates from the margin and the delicate pink-tinted gills can be seen. When mature the cap is convex or nearly flat, is commonly white in color, but with age it may, and often does, become tinged with dingy hues. The flesh is white, but often shows a tendency to become tinged very slightly with red when exposed to the air. It is mild and pleasant to the taste. The gills are rounded at the inner extremity, are closely placed together, of a beautiful pink hue when young, gradually becoming brown, and this peculiarity of the gills, so far as coloration is concerned, is so unlike anything known in the dangerous varieties of mushrooms, as to make it a matter of surprise that any poisonous form should be mistaken for this one. There is quite a large group of pink-spored mushrooms which are supposed to be hurtful, but the gills never assume a dark brown color. The common mushroom grows in grassy places, in pastures, on lawns, manured ground and mushroom beds, *never in thick woods.* It occurs mostly in August and September. In the wild state it generally grows in a group or a single one in a place.

* Contains proteids, 2.219 per cent.

HORSE OR FIELD MUSHROOM.

Agaricus arvensis Schoeff.

Pileus smooth or slightly flocculent, white or yellowish; lamellae at first whitish, or very faint pink, then dull pink to blackish brown in color; stem stout, hollow, thickened or bulbous at the base, white, the collar or ring double, the upper part membranous, white, the lower part thicker, subtomentose radiately split, yellowish; spores elliptical. Prof. C. H. Peck, State Botanist of New York, says: "The Field mushroom or Horse mushroom, is so much like the common mushroom that some botanists have supposed it to be a mere variety of that species. The most notable differences are its large size, its hollow, somewhat bulbous stem, its peculiar veil or collar and the paler gills of the very young plant. The collar appears to be composed of two parts closely applied to each other, and making a double membrane, the lower part of which is of a thicker, softer texture and split in a stellate manner into broad yellowish rays." It is safe to say no serious harm would result if it should be confused with the Common mushroom, so far as usefulness or edibility is concerned. This variety is found in cultivated fields, pastures and waste places, and occasionally under trees near the borders of thin woods. It appears from July to September or the first part of October. There is a variety of opinions as to the esculent qualities of the Field mushroom. Authors describing it as being "very sapid and nutritious, very tough when old, or delicious when young and fresh."

AGARICUS STROBILIFORMIS. FR.

Cone-shaped Agaric.

Pileus convex, becoming expanded, with persistent warts, white or ash-colored; margin even; flesh white, compact; stem bulbous, solid, flaccose—squamose, with sharp marginate concentric channels; lamellae free, rounded behind; ring uneven, torn. Cap two to eight inches broad, stem two to six inches high, one inch thick. Borders of woods, occasionally in thin woods.

AMANITA CAESAREA. SCOP.

Orange Amanita.

Pileus glabrous, striate on the margin, orange or red in color, fading to light yellow on the margin; lamellae yellow; stem loosely wrapped or sheathed at the base by the ruptured membranous white volva, yellow in color; spores white, elliptical. When young the cap and stem are enveloped in a white membrane-like wrapper similar to

a hen's egg in size, shape and color. When development of the parts begins the wrapper is ruptured in its parts, the stem lengthens out and carries the cap upward with it, while the remaining parts of the wrapper surround the base of the stem like an open sack or sheath. At first the cap is red or orange. When mature the whole cap becomes yellow. The flesh is white, as a rule, though often stained with yellow. It has a mild, pleasant taste. The gills are rounded at the extremity and are not attached to the stem. The cap is from two to six inches broad, the stem four to six inches long, one-half inch thick. Grows in thin woods, and in this State seems to prefer moderately sandy soil and pine woods. It is more abundant after our heavy rains from July to September.

AMANITA RUBESCENS. FR.

Reddish Amanita.

Pileus, warty, even or slightly streaked with longitudinal lines on the margin, tinged more or less with dingy-red to brownish-red hues; lamellae white or whitish; stem whitish, bulbous at the base, annulate, generally disfigured with dull reddish stains; spores elliptical. The warts on the cap are not persistent but are easily removed, sometimes washed off by rain, leaving the cap smooth. The wrapper of the young plant early breaks up into fragments and soon disappears. The color of this species varies considerably, ranging from whitish tinged with pink or red, brownish-red to dingy, dirty grayish-red. The stem has a membranous collar near the top, and is smooth in some plants while in others below the collar it is covered with scales or mealy particles. The cap is from three to five inches broad, stem three to six inches long, and about half an inch thick. It is found in woods or open places from July to October.

ARMILLARIA MELLEA. VAHL.

Honey-colored Mellea.

The Honey-colored armillaria is quite plentiful and very variable. The pileus is generally adorned with many minute scales or tufts of brown or blackish hairs, generally more dense toward the center than toward the margin. The color is white to dark reddish-brown, though the most common form is a brownish-yellow, the margin usually striate, glabrous or even. The lamellae adnate or slightly decurrent, white or whitish, sordid with age and quite often variegated with reddish-brown spots; stem annulate, at length brownish at the base; spores white, elliptical; flesh white or whitish, and its taste somewhat acrid or unpleasant. Grows in woods, cleared land, on the ground

or on decaying wood, one of its favorite habitats being about stumps and prostrate trunks of trees in recently cleared land or bushy pastures. Its mode of growth is either solitary, gregarious or in dense tufts. Appears from June to October. While it is edible authors disagree concerning its qualities, though Professor Peck says he has eaten it at various times, both fried and stewed, without any harm.

I desire to note the following varieties of this species as occurring in North Carolina:

Variety *obscura* has the cap covered with many minute blackish scales.

Variety *flava* has the cap yellow or yellowish-red.

Variety *glabra* has the cap smooth.

Variety *bulbosa* has a very distinct bulbous base to the stem.

Variety *exannulata* has a smooth cap and is even on the margin, with the stem tapering at the base. The annulus is very slight or wholly wanting.

BOLETUS CASTANEUS. BULL.

Chestnut Boletus.

Pileus at first convex, becoming plane or depressed, firm, dry, velvety, cinnamon or reddish-tawny, flesh white and unchangeable in color; tubes short, small, white, becoming yellowish; stem short, firm, hollow or stuffed, same color as pileus; spores pale yellow, oval or broadly elliptical.

CAUTION.

Some species of this genus quickly assume bluish tints when the substance is broken or bruised and all such should be avoided and looked upon as poisonous.

BOLETUS LUTEUS. L.

Yellow-brown Boletus.

Pileus glutinous or viscid, brownish-yellow, variegated by darker colored lines, spots or streaks, flesh white or tinged with yellow; tubes yellow, minute, darker colored when old; stem stout, annulate, yellowish, dotted above the membranous annulus; spores yellowish-brown. Cap two to five inches broad, stem one to two inches long, one-half inch thick. Pine woods seem to be the favorite home of this species. August and September.

BOLETUS SUBLUTEUS. PECK.

Small Yellowish Boletus.

This species differs from the above only in its smaller size and more slender stem, which is covered with dots above and below the

collar, which is also less membranous in the mature plant. In this State it seems to be more plentiful than the above, and is equal to it in edible qualities, is found in the same situations, and at the same season of the year.

BOLETUS GRANULATUS. L.

Granulated Boletus.

Pileus glutinous or viscid, especially when moist, usually grayish-yellow or tawny in color, flesh white tinged with yellow; tubes pale yellow, then dingy-ochraceous; stem short, solid, thick, whitish or yellowish, dotted above; spores oblong, rusty-ochraceous. Cap one to four inches broad, stem one to two inches long, half inch thick. Grows in pine woods, groves or under scattered pine trees from July to October. Named from the fact when examined closely the mouths of the tubes are dotted with small granules.

BOLETUS VERSIPELLIS. FR.

Orange-cap Boletus.

Pileus dry, convex, smooth or finely tomentose, reddish or orange-red, flesh white or grayish, the margin is adorned with inflexed remains of a membranous veil; tubes depressed around the stem, white or grayish, darker with age; stem long, solid, roughened by small reddish or blackish colored dots or scales which are quite prominent, whitish; spores brown, oblong-fusiform. Cap two to six inches broad, stem three to six inches long, half inch thick. Woods and open places. August to October.

BOLETUS SCABER. FR.

Rough-stemmed Boletus.

Pileus nearly glabrous, convex, from white to nearly black in color, flesh white or whitish; stem solid, narrowed at the top, whitish or grayish, roughened with many small very prominent reddish or blackish dots or scales; spores brown, oblong-fusiform. Cap one to five inches broad, stem two to six long, half inch thick. Grows in woods, open places, swamps, and in sandy, loamy, clayey, gravelly soil. June to October. Easily known by its peculiar stem.

BOLETUS EDULIS. BULL.

Edible Boletus.

Pileus compact, becoming soft with age, glabrous, grayish-red, brownish-red or tawny-brown, paler on the margin; the flesh is white or yellowish, reddish under the cuticle; tubes depressed around the

stem, convex, whitish, changing to greenish-yellow; stem usually thickened at the base, stout, reticulated, usually only on the upper part, brownish; spores oblong-fusiform. Cap four to six inches broad, very variable in color, usually showing a mixture of red, brown, and yellow hues, stem two to six inches long, half an inch thick. Grows in woods and their borders, and in open places in groves. Usually abundant during July and August in warm, showery weather.

CRATERELLUS CANTHARELLUS. SCHW.

Craterellus.

Pileus fleshy, convex becoming depressed at the center or infundibuliform, firm, yellow or pinkish yellow, flesh white; hymenium even or slightly wrinkled, yellow; stem glabrous, solid, yellow; spores yellowish or pale salmon, subelliptical. Cap from one to three inches broad, stem one to four inches long. Grows in thin woods. August and September.

CANTHARELLUS CIBARIUS. FR.

Chantarelle Fungus.

Pileus fleshy, firm, convex, becoming expanded and depressed, yellow, the margin at first rolled inward or involute, gradually spreading, wavy, or irregular, one to three inches broad. The gills are narrow, thick, distant, prolonged down the stem, branched, the edges rounded or blunt, the irregular branches often connected with adjacent gills, yellow. The stem is firm, solid, variable in length, often from one to two inches long, one-half inch thick, often curved or slightly crooked, tapering downward smooth, yellow, and is considered as good as the cap for food. The spores are elliptical, pale yellow. Grows in woods and open places. It is a common species, and may be found from June to September. Is commonly found growing freely in groups, in wet, showery weather.

PALE-YELLOW CLAVARIA.

Clavaria flava Schoeff.

Stem short, thick, white, much branched; branches cylindrical, even, bundled together, whitish or yellowish, the tips pale yellow; spores oblong-elliptical, yellowish.

This variety has a very thick but short, fleshy white stem, which supports numerous smooth branches often crowded together. These branches divide and sub-divide until the upper part is a dense mass of small branchlets, each one terminating in from one to three blunt tooth-like points. The stem and branches are white or whitish, or, as

the name suggests, are sometimes tinged with yellowish hues, but the ultimate points of the branchlets are, as a rule, a clear, pale yellow while fresh and young. The tips show a tendency to fade as they grow older, at which time the whole plant is uniformly colored. The flesh is white and has an agreeable taste. Generally the plants grow in thin woods and open places, are from three to five inches high, and the mass of branches equally as broad. The season ranges from July to September. The general opinion seems to be that this is one of our very best mushrooms, being tender, well-flavored and easily digested.

CLAVARIA BOTRYTES. PERS.

Red-tipped Clavaria.

Generally speaking, this variety differs but little from the preceding species in size and structure, but is easily distinguished by the red tips of the branches. Elsewhere the color may be whitish, yellow, or pinkish. The tips often fade when old and then it is not so easy to distinguish it. May be found in thin woods or open places during wet weather from July to September.

CORTINARIUS COLLINITUS FR.

Smeared Cortinarius.

"Pileus convex, obtuse, glabrous, glutinous when moist, shining when dry; lamellae rather broad, dingy-white or grayish when young; stem cylindrical, solid, viscid or glutinous when moist, transversely cracking when dry, whitish or paler than the pileus; spores subelliptical. The cap varies in color from yellow to golden or tawny yellow and when the gluten on it has dried it is very smooth and shining. The flesh is white or whitish. The young gills have a peculiar bluish-white or dingy-white color, which might be called grayish or clay color, but when mature they assume the color of the spores. The cap is one and a half to three inches broad, and the stem two to four inches long and one-fourth to one-half inches thick. The plant grows in thin woods, copses and partly cleared lands, and may be found from August to September." I adopt the above description from the report of Prof. C. H. Peck, State Botanist, Albany, N. Y.

CORTINARIUS CINNAMOMEUS. FR.

Cinnamon Cortinarius.

Pileus convex, obtuse, sometimes umbonate, thin, dry, fibrillose when young, flesh yellowish in color; lamellae adnate, thin, close; stem equal, stuffed, or sometimes hollow, slender, flexuous, silky; spores elliptical. The cap is about two inches broad, commonly cin-

namon-brown in color, the stem is one to three inches long and about one-fourth of an inch thick and yellowish, or colored like the cap. Grows in woods under trees, or in mossy swamps. Late summer and autumn.

CORTINARIUS VIOLACEUS. FR.

Violet Cortinarius.

Pileus convex, then plane, dry, adorned with numerous hairy tufts or scales, which are persistent and dark violet; lamellae rather thick, distant, either rounded or notched at the inner end, colored like the pileus when young, changing to brownish-cinnamon in the mature plant; stem solid, bulbous, fibrillose, color same as pileus, spores subelliptical. The flesh is slightly tinged with violet. Cap two to four inches broad, stem two to five inches long, about one-half inch thick. This beautiful mushroom grows in the woods among fallen leaves and may be found from July to September.

CORTINARIUS CASTANEUS. FR.

Chestnut Cortinarius.

Pileus rather fleshy, firm, convex or campanulate, expanded when older, gibbous, even, chestnut brown in color, shining as if varnished when dry; stem cartilaginous, stuffed, then hollow, even, pale, violet, or pallid red; veil white, fibrillose; lamellae fixed, ventricose, crowded, violet then ferruginous. Variable in size and form. In woods and cultivated places.

COPRINUS COMATUS. FR.

Horse-tail Fungus.

Pileus at first oblong, or nearly cylindrical, becoming campanulate or expanded and splitting on the margin, adorned with yellowish scales, whitish; gills crowded, white, then tinged with red or pink, finally turning black and dripping an inky fluid; stem rather long, hollow, smooth, or slightly clothed with fine fibers, white or whitish, at first with a slight movable collar or ring; spores elliptical, black. The pileus, instead of expanding at times, remains closed in the form of an unopened umbrella, and does not expand or roll outward until it begins to decay, when, instead of putrefying like most fungi, it quickly dissolves, forming the inky fluid mentioned above. The horse-tail, or maned agaric, as it is often called, grows in dense, but not numerous, clusters, mainly on dung among grass, or by roadsides, and its stems extend a considerable distance below the surface of the ground. This species is not likely to be mistaken for any poisonous variety. Ordinarily it does not appear till autumn, though

it may, in exceptional cases, appear in early summer, only to disappear again until autumn, usually during the month of September. The gills are closely crowded together at first, are white, but soon become pinkish, reddish, or purplish, quickly changing to black. Prof. Peck says: "Sometimes all these hues may be seen at one time in one plant." The cap is from one to three inches long before expanding. The stem ranges from three to eight inches in length and is usually about one-third of an inch thick. Since this plant is quite fragile, great care should be exercised in handling it. It is quite tender, easily digested, and should not be eaten after the gills assume their black color.

COPRINUS ATRAMENTARIUS. FR.

Inky Coprinus.

Pileus ovate, expanding with age, glabrous, or with a few pale, spot-like scales in the center, grayish brown; lamellae crowded, white at first, flacculose on the edge, then black; stem glabrous, hollow, white, or pale gray, spores elliptical, black. The cap is from one to three inches in diameter, and the stem is from two to four inches long, about one-third of an inch thick. Grows in clusters in rich soil, gardens, waste places, or woods. August to October.

CLITOPILUS PRUNULUS. SCOP.

Plum Clitopilus.

Pileus compact, fleshy, convex, regular, repand, dry, pruinate, white or cinereous white, flesh white, unchangeable, odor farinaceous, pleasant; lamellae subdisdant, deeply decurrent, flesh-colored; stem naked, solid, striate, white; spores subelliptical, pointed at one end. Pileus one to three inches broad, stem one to two inches long. Found in woods. Rather scarce, but a very fine esculent species.

CLITOPILUS ORCELLA. BULL.

Sweet-bread Mushroom.

Pileus soft, broadly, convex, fleshy, irregular and wavy on the margin as a rule, silky, white, or yellowish-white; lamellae decurrent, close; stem short, flocculose, solid, often excentric; spores oblong-elliptical, pointed at each end.

COLLYBIA ESCULENTUS. JACQ.

Edible Collybia.

Pileus fleshy or slightly so, plane, smooth, obtuse; stem fistulose, equal, tough, straight, very smooth, rooting, clay-colored; lamellae lax, adnate, whiteish. In pastures. April to June.

COLLYBIA RADICATA. RELH.

Rooted Collybia.

Pileus fleshy, but thin, convex, often umbonate, glabrous, viscid when moist, generally radiately wrinkled in the center, the color varies from grayish brown to dark brown, sometimes nearly white, flesh white; lamellae broad, distant, adnexed; stem firm, long, glabrous, stuffed, tapering upwards, striate or grooved, color same as pileus, ending in a long root-like extension which enters the earth deeply; spores elliptical with a faint oblique apiculus at one end. In woods or bushy places, about stumps or under trees. Common. Season, June to October.

COLLYBIA VELUTIPES. CURT.

Velvet-stemmed Collybia.

Pileus rather thin, fleshy, convex, plane, obtuse, viscid, glabrous, tawny, or reddish-yellow, yellowish on the margin, brownish on the disk, margin wavy, irregular; lamellae broad, subdistant, rounded behind, adnexed, whitish or yellowish; stem firm, cartilaginous externally, stuffed or hollow, brownish or tawny-brown, profusely velvety-hairy; spores oblong-elliptical. Cap one to two inches broad, stem one to two inches high. Grows on decaying wood or trunks of trees. Fall and spring. This plant is listed by Curtis, but not as edible. It is favorably spoken of by those who have tried its edible properties.

CLITOCYBE CLAVIPES. PERS.

Club-stemmed Clitocybe.

Pileus convex or nearly plane, thick, fleshy, nearly obconical, glabrous, soft, brown, or blackish-brown; lamellae decurrent, distant, white, or slightly tinged with yellow; stem solid, tapering upward, same color as pileus. Cap one to three inches broad, stem one to three inches high, thicker at base than at the top. Usually found in pine woods. August to October. Not listed as edible by Curtis, but favorably spoken of by those who have tried it.

CLITOCYBE MONADELPHA.

Pileus convex, umbonate or obtuse, the center depressed when old, usually reddish brown in color, though it often assumes a yellowish honey color, scaly, fibrillose. Gills short, decurrent, pale flesh color. Flesh solid, and same color as gills. Stem long, slender, solid, slightly tapering to the base, pale brown or flesh color above, usually darker below. At the base of stumps.

CLITOCYBE ODORUS.

Fragrant Clitocybe.

Pileus fleshy, at length plane, even, smooth, subrepand, tough, fragrant, dirty green in color, with the odor of aniseed; stem elastic, unequal, smooth, stuffed, the base incrassated; lamellae adnate, broad, slightly crowded, pale. In woods. August to November.

CLITOCYBE GIGANTEUS. SOW.

Giant Clitocybe.

Pileus funnel-shaped, not umbonate, minutely flocculose, white, dullish white or ash-gray; stem thick, equal; lamellae white, whitish or yellowish, decurrent. Cap four to eight inches broad, stem two to four inches high, one inch thick or more. Grows in woods.

CLITOCYBE NEBULARIS BATSCH.

Clouded Clitocybe.

Pileus firm, convex, becoming almost flat, fleshy, smooth, and of a grayish color, becoming paler with age, the center darker than the margin; lamellae crowded, slightly decurrent, white or very slightly tinged with yellow; stem short, firm, stout, thickened at the base; spores white, elliptical; flesh white. Cap two to five inches broad, stem one to three inches long, one-half inch thick. Appears during August and September among the fallen leaves, generally single, occasionally in clusters.

FISTULINA HEPATICA. FR.

Beefsteak Mushroom.

Pileus soft, juicy, fleshy, dark red; the flesh is red, variegated with streaks of a brighter color; tubes small at first, yellowish, often tinged with pink, growing dingy with age; spores yellowish, elliptical. Cap from two to eight inches broad, stem very short, lateral. Grows from old oak or chestnut stumps. July to September. Locally known as vegetable beefsteak, liver fungus, oak or chestnut tongue.

HYDNUM CORALLOIDES. SCOP.

Coral-like Hydnum.

Pure white, much branched, becoming yellowish with age, branches dense, numerous, spreading, angular or slightly flattened; spores glabrous, uniniculeate. From two to four inches high, and usually, about as broad. Grows on prostrate trunks of trees of various kinds. August to October. More plentiful in rainy weather. Resembles cauliflower or coral in appearance.

HYDNUM RUFESCENS. PERS.

Reddish Hydnum.

This fungus, which is classed as a mere variety of the above, differs from it in being thinner, smaller, more regular, the stem central or nearly so, color more red. It is one of the most common of this class and grows in similar locations.

HYDNUM REPANDUM. L.

Hedge-hog Mushroom.

Pileus fleshy, convex or plane, irregular, nearly smooth, fragile, pale-buff, rusty-yellow, pale-red or sienna-red in color, very variable; spines whitish, pointed; stem whitish or paler than the pilens; solid, stout, sometimes eccentric; spores yellowish, globose. Cap one to four inches broad, stem one to three inches long, half an inch thick. Grows in woods or open places among naked soil, grass, or fallen leaves. July to October. May be dried and preserved for future use.

HELVELLA CRISPA. FR.

White Helvella.

Pileus deflexed, lobed, or variously contorted, white or whitish; stem equal, sometimes swollen at the base, deeply grooved, white or whitish; spores elliptical. This variety is distinguished from all others by its white color and peculiar stem, which is grooved, and ribbed, the grooves, or furrows, being interrupted and of various lengths. The plant is usually from two to four inches high, and the stem is about one-half inch thick. Grows in woods from July to September.

HYGROPHORUS FULIGINEUS. FROST.

Sooty Hygrophorus.

Pileus convex or plane, viscid, glutinous, glabrous, grayish-brown or fuliginous, almost black near the center; lamellae adnate or decurrent, subdistant, white; stem viscid or glutinous, solid, white or whitish; spores elliptical. Cap one to four inches broad, stem two to four inches long. Usually found growing in tufts in pine woods from September to November. Not listed as edible by Curtis, but it is tender and of excellent flavor.

HYGRAPHORUS EBURNEUS.

Black Hygrophorus.

Pileus fleshy, convex, then plane, even, smooth, margin entire, soon naked; stem stuffed at first, then hollow, unequal, punctate above with granular scales; lamellae firm, straight, distant. In woods.

HYGROPHORUS PRATENSIS. FR.

Meadow Hygrophorus.

Pileus convex turbinate, or nearly flat, compact, glabrous, margin thin; lamellae thick, decurrent, distant, whitish or yellowish; stem short, glabrous, white or whitish; spores whitish, broadly elliptical. The cap is commonly buff, yellowish, or tinged with red, sometimes nearly white. The flesh is white. The stem is generally white, often tapers downward. Cap one to two inches broad, stem one to two inches long, one-half inch thick. Grows in thin woods, old pastures, and clearings, and may be found from July to October.

LYCOPERDON CYATHIFORME. BOSC.

Puff-ball, or Devil's Snuff-box.

The general covering or peridium of the puff-ball is from three to six inches in diameter, nearly spherical, depressed, globose, smooth or minutely downy or scaly, whitish ash-colored, brown or pinkish-brown, often cracking into areas in the upper part, commonly with a short thick stem-like base; the spores and spore-bearing threads, (capillitium) purplish-brown, these and the peridium falling away and disappearing when old, leaving a cup-shaped base with ragged margins; spores globose, rough. Very few people know that the common puff-ball is good to eat. This is the fungus which every schoolboy loves to kick and see the cloud of "smoke" arise. It is from this peculiarity that the fungus takes its name. When young the puff-ball is filled with a white substance, and it is at this stage that it makes a delicious and nutritious food. When in good eating condition, during the first week of its growth above ground, the flesh of a puff-ball is perfectly white and of a curd-like consistency. Later on it becomes streaked with yellow, and finally changes into a mass of brownish or dark purple powdery spores, which issue in a smoky cloud when the ball is compressed. It should not be used for food after the flesh becomes streaked with yellow. Up to this time only one case of poisoning from eating puff-balls is recorded. The species in this instance is a rough, warty, yellowish-brown puff-ball, found along roadsides. It is Scleroderna vulgare. It is hard, and within is purplish black, marbled with white. It is an open question as to whether or not this variety is dangerous, but it is unattractive, and easily distinguished from the edible species. Any puff-ball over two inches in diameter with a firm, white, curdy interior, is perfectly safe. Our edible species grow in pastures, and cultivated ground. It appears in August, September and October.

LACTARIUS DELICIOSUS. FR.

Delicious Lactarius.

Pileus convex, slightly umbilicate, becoming nearly plane or depressed centrally, rarely funnel-shaped, glabrous, yellowish-orange, or grayish-orange, varied by mottled zones; lamellae orange-colored; stem glabrous, marked, as a rule, with orange-colored spots, color similar to, or paler than, the pileus; juice orange-colored; spores yellowish, globose. May be distinguished from all other species of Lactarius by the color of the juice. The flesh is white, tinged with yellowish-orange. When bruised or cut the juice exudes and wound assumes a dull greenish hue. Cap two to five inches broad, stem one to four inches long, about half an inch thick. Quite common in damp, mossy places, woods and groves, especially pine woods. Often found in swamps when dry weather prevails and prevents its growth elsewhere. July to October.

LACTARIUS ANGUSTISSIMUS. LASCH.

I have seen no specimens of this variety, though it is listed as common by Curtis.

LACTARIUS PIPERATUS. SCOP.

Peppery Lactarius.

Pileus umbilicate, compact, then funnel-shaped, regular, even, smooth, white, not zoned; stem solid, thick, short, white; lamellae decurrent, bow-shaped, narrow, crowded, forked, white; juice white, acrid, plentiful. Cap three to seven inches broad, stem one to two inches high, one-half inch thick. Grows in woods.

LACTARIUS SUBDULCIS. FR.

Sweetish Lactarius.

Pileus fleshy, thin, papillate, becoming depressed, shining, even, reddish or rufous-cinnamon; stem stuffed, becoming hollow, equal, pruinose; lamellae fragile, crowded, color similar to pileus; juice white, mildish. Cap two to four inches broad, stem one to two inches high, half inch thick. Grows in woods.

LACTARIUS VOLEMUS. FR.

Orange-brown Lactarius.

Pileus convex, nearly plane, centrally depressed, or almost funnel-form at times, dry, glabrous, golden-tawny, or brownish orange, often a darker hue in the center; lamellae crowded, white or tinged with

yellow, adnate or subdecurrent; stem a little paler in color than the pileus, glabrous; juice abundant, white; spores white; globose. This species varies but little in color and is easily recognized. When cut or bruised it exudes a white juice and the wound quickly assumes a brownish hue. Cap two to five inches broad, stem one to four inches long, half an inch thick. Grows in thin woods, or open places, and seems especially fond of oak and chestnut groves. July to October.

LACTARIUS INSULSUS. FR.

Yellow Lactarius.

Pileus fleshy, umbilicate, then infundibuliform, viscid, somewhat zoned, yellowish, the margin naked; stem firm, stuffed, then hollow, pallid; lamellae crowded, forked, pallid, the milk is white, slightly acrid. In and near the borders of woods.

LEPIOTA MASTOIDEUS. FR.

Pallid Lepiota.

Pileus fleshy, soft, ovate, then expanded, umbonate, breaking up into scattered papillae, stem hollow, bulbous, regular, weak, smooth; ring movable, entire; lamellae pallid, remote. In woods. September and October.

LEPIOTA RACHODES. VITT.

Brown Lepiota.

Pileus covered with an even, smooth, brown, continuous cuticle when young, which separates, except on the disk, as the plant grows, into loose scales that fall away leaving the surface torn with fibrillose scales. Flesh white, reddish when bruised. Lamellae remote, free, white. Ring movable. Stem stout, bulbous at the base, smooth.

LEPIOTA EXCORIATUS. SCHOEFF.

Fawn-colored Lepiota.

Pileus fleshy, soft, umbonate, or obscurely so, thin, breaking up into scales, pale fawn, the umbo dark, in color, two to three inches across, stem short, hollow, cylindrical, slightly bulbous, smooth, white, ring movable, lamellae remote. Nearly odorless. In pastures. May to September.

LEPIOTA PROCERA. SCOP.

Parasol Fungus.

Pileus thin, having a central knob-like elevation, slightly covered

with brown spot-like scales; gills white or yellowish-white, free, remote from the stem; stem very long, hollow, bulbous, having a collar or "ring;" spores large, elliptical, white. The cap is brownish or reddish-brown in color, and when young resembles an egg in shape. It sometimes expands to a moderate degree, but usually remains convex in form like an opened parasol or umbrella, generally from three to five inches broad, while the stem grows to a height varying from three to ten inches, and is usually about one-half inch thick. The gills are whitish or lightly tinged with yellow. They are placed closely side by side, narrower toward the stem than at the margin. The collar, or "ring," is rather thick, firm, and in a mature plant becomes loosened and movable. The stem is hollow, though at times it contains a cottony or webby pith. The flesh is soft, dry, white, and slightly tough, with no unpleasant odor or flavor. Usually grows singly or scattered, but sometimes in clusters, in thin woods, fields, pastures, and by roadsides. July to October.

MORCHELLA ESCULENTA. PERS.

Common Morel.

In the common morel the cap is usually longer than broad, nearly globose, and narrowed toward the top. The pits or depressions on its surface are rather broader and more round than on other morels, giving the surface the appearance of a honeycomb. The upper portion is at first ochraceous or cream-colored, but becomes darker yellow with age. The stem is whiter and when fresh is covered with fine granulations. Writers differ as to the edible qualities of the morels, some being enthusiastic in their praise, while others speak in qualified terms. They appear toward the end of spring or early summer in grass under or near trees, but as a rule are more abundant in places which have been burned over.

MARASMIUS SCORODONIUS. FR.

Strong-scented Marasmius.

Pileus, fleshy, rather tough, even, becoming plane, rugulose, crisped; stem fistulose, equal, smooth, rufous, shining; lamellae adnate, whitish, crisp. In thin woods and pastures.

MARASMIUS OREADES. FR.

Fairy-ring Mushroom.

Pileus fleshy, glabrous, tough, convex plane, umbonate, reddish or tawny-red, paler with age; lamellae distant, broad, rounded behind or free, whitish or yellowish; stem slender, solid, tough, coated with a thick villosity, whitish; spores white, nearly elliptical. Cap one to

two inches broad, stem one to three inches long, about one-fourth inch thick. Common in pastures, on lawns and grassy places along roadsides from May to October. Grows in groups, clusters or circles.

PAXILLUS INVOLUTUS. FR.

Involute Paxillus.

Pileus convex, then expanded and depressed at the center, compact, almost glabrous, the margin is involute and covered with a grayish tomentum when young; lamellae decurrent, branched, close, reticulately connected behind, ranging in color from whitish, yellowish, sub-ferruginous to reddish-brown where bruised or cut; stem either excentric or central, glabrous, solid, colored like the pileus, which is very variable in color, exhibiting an admixture of gray, ochraceous, ferruginous and brown hues. More than apt to be viscid when moist. The flesh is white tinged with gray. The cap is from two to four inches broad, the stem one to three inches long, one-half inch thick. Grows in woods either on the ground or decayed woods, in groups as a rule, preferring damp mossy soil rich in vegetable matter. August to November.

PSALLIOTA SYLVATICA.

Pileus explanate, even, profusely covered with fibrillose oppressed brown scales. Flesh white, becoming brownish when cut or bruised. Lamellae free, pink or pinkish, darker when old, broader behind. Stem equal, or nearly so, slender, smooth, hollow, white. Veil large, white, resembling a reflexed ring on the stem. Grows in woods, usually in rich leaf mold.

PSALLIOTA SILVICOLA. VITT.

Pileus pure white, convex, expanded, smooth or nearly so, with a few white silky fibrils. Lamellae pink or rose color when young, becoming light brown when old, rounded behind, free. Ring loose, large, flabby, flocculent. Stem smooth, white, stuffed, long, then hollow, bulbous at the base. Grows only in woods. This is undoubtedly Psalliota cretacea of Curtis' list.

PSALLIOTA AMYGDALINUS. CURT.

This plant is listed by Curtis, but no description of it can be found, and it is a very doubtful species at best. I have found no plant in this State which could possibly be this one. It is therefore admitted entirely upon his authority.

PHOLIOTA ADIPOSA. FR.

Fat Pholiota.

Pileus firm, fleshy, hemispherical or subconical at first, becoming convex, quite viscid or glutinous, when wet, squamose, yellow, flesh whitish; lamellae adnate, close, yellowish at first, becoming ferruginous with age; stem slightly thickened at the base, squamose below the flimsy radiating collar, solid or stuffed, yellow; spores elliptical. Cap from two to four inches broad, stem two to four inches long. Generally found in tufts on stumps or dead trunks of deciduous trees. September to November. Not classed among the edible varieties by Curtis.

PHOLIOTA PRAECOX. PERS.

Early Pholiota.

Pileus convex or plane, nearly glabrous, soft, whitish, tinged with yellow or tan-color; lamellae adnexed, close, whitish, then brownish or rusty-brownish; stem slender, mealy or glabrous, hollow or stuffed, whitish; spores rusty-brown, elliptical. Cap one to two inches broad, stem one to three inches long. Grows in grassy ground, lawns and gardens from May to July. Not listed as edible by Curtis, but said to have good edible qualities by parties who have tried it.

PHOLIOTA SQUARROSUS. MULL.

Rough Pholiota.

Pileus fleshy, campanulate, squarrose, convex, then expanded, dry; stem stuffed, squarrose, attenuated at the base, with darker, innate, crowded, revolute scales; the lamellae sub-decurrent, narrow, crowded, pallid, olivaceous, gradually becoming ferruginous. On trunks of trees.

PHOLIOTA MUTABILIS. SCHOEFF.

Variable Pholiota.

Pileus fleshy, convex, then expanded, smooth, becoming pale in color, margins thin, stem stuffed, then hollow, rough, rigid, scaly, dark brown at the base; lamellae adnate or decurrent, crowded, pallid, then pale-brown to cinnamon color. On trunks of trees.

PLEUROTUS TESSULATUS. FR.

Tessellated Pleurotus.

Pileus fleshy, convex-plane, smooth, the cuticle guttate in a tessulate manner, tawny, becoming paler; stem eccentric, compact, short, smooth, attenuated downwards, lamellae adnate, with a tooth,

crowded, white, gradually becoming yellowish. Has the odor of new meal. On trunks of trees. August to October.

PLEUROTUS ULMARIUS. BULL.

Elm Pleurotus.

Pileus nearly flat or convex, glabrous, firm, white tinged with reddish-yellow or brownish-yellow near the center; lamellae broad, rounded, usually notched at the inner extremity, adnexed, white or cream-white; stem firm, generally curved, eccentric, white or whitish; spores globose, white. The flesh is firm and white. Cap three to seven inches broad, stem two to four inches long, about one inch thick. It appears from August to November, and is usually found growing on elm trees, though it may often be found on other trees, especially maple, poplar, and mulberry.

PLEUROTUS SAPIDUS. KALCHB.

Sapid Pleurotus.

Pileus usually convex or depressed, irregular, glabrous, variable in color, flesh white; lamellae decurrent, whitish, sub-distant; stems tufted growing from a common base lateral or eccentric, glabrous, white; spores oblong, pale lilac. Grows in crowded clusters or tufts, the stems usually united at the base. The color of the cap varies from white, yellowish, ash-gray, dull lilac to brownish. The flesh is always white. Cap two to five inches broad, stem one to two inches long, half an inch thick. Grows in woods and open places from June to November. Quite common in wet weather, usually found about old stumps, decaying wood, prostrate trunks of trees, or even on dead or dying trees while standing.

PLEUROTUS OSTREATUS. FR.

Oyster Mushroom.

Pileus convex, imbricated, soft, moist, glabrous, whitish, brownish, or cinereous, flesh white; lamellae broad, decurrent, anastomosing at the base, white to whitish; stem firm, short, lateral, indistinct or absent; spores white, oblong. Grows on decaying wood and at the same season as the above. Probably named Oyster Mushroom, or fungus, from its shape, rather than from its flavor.

PLEUROTUS GLANDULOSUS. FR.

Glandular Pleurotus.

Can be distinguished from the preceding varieties by the broad, glandular, white lamellae, which are branching or anastomosing behind. Grows in similar locations.

RUSSULA LEPIDA. FR.

Pretty Russula.

Pileus compact, fleshy, convex, becoming depressed, silky, cracked, scaley; margin obtuse, even; stem solid, compact, even, white, whitish or pinkish; lamellae rounded, thick, crowded, some of them forked, white. Grows in woods.

RUSSULA ALUTACEA. FR.

Leathery Russula.

Pileus fleshy, expanded, sometimes depressed, viscid, pale; margin thin, becoming striate, tuberculose; flesh white, mild; stem solid, spongy, stout, white or reddish, even; lamellae free, equal, distant, thick, yellow, becoming yellowish tan-colored, naked. Grows in woods.

RUSSULA VIRESCENS. FR.

Greenish Russula.

Pileus nearly globose at first, then expanded, convex or centrally depressed, dry, firm, with scattering white warts or flocculent patches, greenish or grayish-green, or at times tinged with yellow; lamellae rather close, free, or nearly so, white or whitish, stem short, white, firm; spores white, globose, roughened. This species can be distinguished from the other greenish ones by its dry, not viscid cap. Cap two to four inches broad, stem one to two inches long, half inch thick. Grows in woods, groves, or grassy grounds. July to September.

TRICHOLOMA PERSONATUM. FR.

Masked Tricholoma.

Pileus glabrous, moist, has a pale lilac hue which changes to a russety shade with age; lamellae crowded, rounded behind, separable from the pileus, free, or nearly so, violaceous gradually becoming sordid-whitish or fuscous; stem solid, short, fibrillose, whitish or tinged with lilac or pale violet; spores elliptical, whitish. Cap two to five inches broad, stem one to three inches long, half inch thick. Grows in open grassy places and thin woods. August and September.

TRICHOLOMA ALBELLUS. D. C.

Pileus conical, then expanded, smooth, moist, mottled, disc subumbonate, compact; margin thin or naked; stem solid, ovatobulbous, fibrillose-striate; lamellae attenuated near the stem, and adnexed without a tooth, entire, crowded, white, broader in front. Spores small, ovoid.

VOLVARIA SPECIOSA. FR.

Pileus soft, fleshy, obtuse, companulate, then expanding, smooth, even, viscid, whitish or grayish; stem solid, somewhat bulbous, attenuated; volva loose, villous; lamellae free, pink or pinkish. Along roadsides and similar places, on dung, etc.

VOLVARIA BOMBYCINUS. SCHAEFF.

Pileus white or fuscous, fleshy, soft, campanulate at first, gradually expanding, covered with silky fibres which are squamulose when old. Gills remote, free, flesh-colored. Stipe solid, attenuated upward, even, smooth, white. Volva thick, large, irregularly ruptured, persistent at the base. Usually found growing on maple and beech.

OTHER SPECIES FOUND IN NORTH CAROLINA.

The following list of edible species have been found in North Carolina, but not in sufficient quantity to warrant more than a passing notice, and that merely for the purpose of establishing their geographical range:

Tricholoma Russula, Schaeff.
Tricholoma frumentaceus, Bull.
Tricholoma hypopithus, Curtis.
Tricholoma Columbetta, Fries.
Tricholoma castus, Curtis.
Tricholoma conscoiastus, Curtis.
Pleurotus Pometi, Fries.
Pleurotus salignus, Perosn.
Boletus elegans, Bull.
Boletus flavidus, Fries.
Boletus collinitus, Fries.
Boletus bovinus, L.
Boletus subtomentosus, L.
Polyporus leucomelas, Pers.
Polyporus ovinus, Schaeff.
Polyporus poripes, Fries.
Polyporus frondosus, Fries.
Polyporus cristatus, Pers.
Polyporus confluens, A. and S.
Polyporus giganteus, Pers.
Polyporus sulfureus, Bull.
Polyporus Berkeleyi, Fries.
Tremella mesenterica, Retz.
Hydnum imbricatum, L.
Hydnum subsquamosum, Batsch.
Hydnum laevigatum, Sow.
Hydnum caput-medusae, Bull.

Sparassis crispa, Fries.
Sparassis laminosa, Fries.
Lycoperdon Bovista.
Lycoperdon saccatum, Fr.
Lycoperdon Wrightii, B. and C.
Bovista nigressens, Pers.
Bovista plumbea, Pers.
Morchella Caroliniana, Bosc.
Morchella deliciosa, Fries.
Helvella lacunosa, Afz.
Helvella sulcata, Afz.
Helvella infula, Schaeff.
Clavaria fastigiata, L.
Clavaria muscoides, L.
Clavaria tetragona, Schw.
Clavaria cristata, Pers.
Clavaria rugosa, Bull.
Clavaria fuliginea, Pers.
Clavaria macropus, Pers.
Clavaria subtilis, Pers.
Clavaria pyxidata, Pers.
Clavaria aurea, Schaeff.
Clavaria formosa, Pers.
Pachyma Cocos.
Craterellus cornucopioides, L.

GLOSSARY OF TERMS USED IN DESCRIBING MUSHROOMS.

Abortive, imperfectly developed.
Acaulescent, acaulous, having a very short stem or none.
Acetabuliform, cup-shaped.
Acicular, needle-shaped.
Aculeate, slender pointed.
Acuminate, terminating in a point.
Acute, sharp pointed.
Adnate, gills firmly attached to the stem.
Adnexed, gill just reaching the stem.
Adpressed, pressed in close contact, as applied to gills.
Aeruginous, verdigris-green.
Agglutinated, glued to the surface.
Aggregated, collected together.
Alveolate, socketed or honey-combed.
Amphigenous, when the hymenium is not restricted to a particular surface.
Analogy, superficial or general resemblance without structural agreement.
Anastomosing, branching, joining of one vein with another.
Annular, ring-shaped.
Annulate, having a ring.
Annulus, ring round the stem of agarics.
Apex, in mushrooms the extremity of the stem nearest the gill.
Apical, close to the apex.
Apiculate, terminating in a small point.
Appendiculate, hanging in small fragments.
Approximate, of gills which approach the stem but do not reach it.
Arachnoid, cobweb-like.
Arboreal, arboricle, tree-inhabiting.
Arcuate, bow-shaped.
Areolate, divided into little areas or patches.
Argillaceous, clayey, like clay.
Ascending, directed upward.
Asci, ascidia, spore-cases of certain mushrooms.
Attenuated, tapering gradually to a point upward or downward.
Band, a broad bar of color.
Banded, marked with bands.
Barbed, furnished with fibrils or hairs.
Basidia, cellular processes of certain mushroom-bearing spores.
Bibliography, condensed history of the literature of a subject.
Bifurcated, divided into two, as in the gills of certain agarics.
Booted, applied to the stem of a mushroom when inclosed in a sheath or volva.
Boss, a knob or short rounded protuberance.
Bossed, bullate, furnished with a boss or knob.
Branched, dividing from the sides; also styled furcate and forked.
Brick, trade term for a mass of mushroom spawn, in dimensions the size of a brick of masonry.
Broad, wide or deep vertically.
Bulbous, having the structure of a bulb.
Caespitose, growing in tufts.
Calcareous, chalky, chalk-like.
Calyptra, applied to the portion of volva covering the pileus.
Campanulate, bell-shaped.
Canaliculate, channeled.
Cancellate, latticed,marked both longitudinally and transversely.
Cap, the expanded, umbrella-like receptacle of the common mushroom.
Capillitium, spore-bearing threads, variable in thickness and color, sometimes continuous with the sterile base, sometimes free, dense, and persistent, or lax and evanescent, often branched; found in the Lycoperdons.
Carious, decayed.
Carneous, fleshy.
Cartilaginous, hard and tough
Castaneous, chestnut color.
Ceraceous, wax-like.
Channeled, hollowed out like a gutter.
Chlorosis, loss of color.
Cilia, marginal hair-like processes.
Ciliate, fringed with hair-like processes.
Cinerous, ash-colored.
Circinate, rounded.
Clathrate, latticed.
Clavate, club-shaped, gradually thickened upward.
Close, packed closely side by side; also styled crowded.
Columella, a sterile tissue rising column-like in the midst of the capillitum, serving as a point of insertion for the threads which connect it with the peridium in the form of a net-work.

Concentric, having a common center, as a series of rings one within another.
Connate, united by growing, as when two or more caps become united.
Concolored, of a uniform color.
Confervoid, from the finely branched threads.
Continuous, without a break, of a surface which is not cracked, or of one part which runs into another without interruption.
Cordate, heart-shaped.
Coriaceous, of a leathery texture.
Corrugated, drawn into wrinkles or folds.
Corticated, furnished with a bark-like covering.
Cortina, a partial veil formed not of continuous tissue but of slender threads, which in certain mushrooms when young unite the stem with the margin of the cap. This membrane remains later as a filamentous ring on the stem, or threads hanging to the margin of cap. Applied to the peculiar veil of the Cortinarias.
Cratera, a cup-shaped receptacle.
Crenate, crenulate, notched at the edge, the notches blunt or rounded, not sharp as in a serrated edge, serratures convex.
Cribrose, pierced with holes.
Cryptogamia, applied to the division of non-flowering plants.
Cupreous, copper-colored.
Cuspidate, with a sharp, spear-like point.
Cyathiform, cup-shaped.
Cystidia, sterile cells of the hymenium, generally larger than the basidia cells, with which they are found.
Deciduous, temporary falling off.
Decurrent, as when the gills of a mushroom are prolonged down the stem.
Dehiscent, a closed organ opening of itself at maturity, or when it has attained a certain development.
Deliquescent, relating to mushrooms, which at maturity become liquid.
Dentate, toothed, with concave serratures.
Denticulate, finely dentate.
Dermini, brown or rust-colored spores.
Determinate, ending definitely; having a distinctly defined outline.
Diaphanous, transparent.
Dichotomous, paired by twos; regularly forked.
Dimidiate, applied to some gills of mushrooms whch reach only halfway to the stem.
Disciform, of a circular, flat form.
Dissepiments, dividing walls.
Distant, applied to gills which have a wide distance between them.
Divaricate, separating at an obtuse angle.
Echinate, furnished with stiff bristles.
Echinulate, with minute bristles.
Effused, spread over without regular form.
Elongate, lengthened.
Emarginate, applied to gills which are notched or scooped out suddenly before they reach the stem.
Embryo, the mushroom before leaving its volva or egg stage; also any early stage of mushrooms which may have no volva.
Entire, the edge quite devodi of serrature or notch.
Epidermis, the external or outer layer of the plant.
Epiphytal, growing upon another plant.
Equal, all gills of the same, or nearly the same length from back to front.
Eroded, the edge ragged, as if torn.
Etiolated, whitened, bleached.
Even, distinguished from smooth; a surface quite plane as contrasted with one which is striate, pitted, etc.
Excentric, out of center. The stems of some mushrooms are always excentric.
Exotic, foreign.
Family, a systematic group in scientific classification embracing a greater or less number of genera which agree in certain characters not shared by others of the same order.
Farinaceous, mealy.
Farinose, covered with a white, mealy powder.
Fascia, a band or bar.
Fasciate, zoned with bands.
Fasciculate, growing in small bundles.
Fastigiate, bundled together like a sheath.
Favose, honeycombed.
Ferruginous, rust-colored.
Fibrillose, clothed with small fibers.
Fibrous, composed of fibers.
Filiform, thread-like.
Fimbriated, fringed.
Fissile, capable of being split.
Fistular, fistulose, tubular.
Flabelliform, fan-shaped.

Flavescent, yellowish, or turning yellow.
Flexuose, wavy.
Flocci, threads as of mold.
Floccose, downy.
Flocculose, covered with flocci.
Foveolate, pitted.
Free, in relation to the gills of mushrooms reaching the stem but not attached to it.
Fringe, a lacerated marginal membrane.
Fructification, reproducing power of a plant.
Fugacious, disappearing rapidly.
Furcate, forked.
Fulinginous, blackish or sooty.
Fulvous, tawny; a rather indefinite brownish yellow.
Furfaceous, with branny scales or scurf.
Fuscous, brownish, but dingy; not pure.
Fusiform, spindle-shaped.
Genera, plural of genus.
Generic, pertaining to a genus.
Genus, a group of species having one or more characteristics in common; the union of several genera presenting the same features constitutes a tribe.
Gibbous, in the form of a swelling; of a pileus which is more convex or tumid on one side than the other.
Gills, vertical plates radiating from the stem on the under surface of the mushroom cap.
Glabrous, smooth.
Glaucescent, inclining to glaucose.
Glaucose, covered with a whitish-green bloom or fine white powder easily rubbed off.
Globose, nearly spherical.
Granular, with roughened surface.
Greaved, of a stem clothed like a leg in armor.
Gregarious, of mushrooms not solitary, but growing in numbers in the same locality.
Grumous, clotted, composed of little clustered granis.
Guttate, marked with tear-like spots.
Gyrose, circling in wavy folds.
Habitat, natural abode of a vegetable species.
Hepatic, pertaining to the liver; hence, liver-colored.
Heterogeneous, of a structure which is different from adjacent ones.
Hibernal, pertaining to winter.
Hirsute, hairy.
Homogenous, similar in structure.
Hyaline, transparent.
Hygrophanous, looking watery when moist and opaque when dry.
Hymenium, the fructifying surface of the mushroom; the part on which the spores are borne.
Hymenophore, the structure which bears the hymenium.
Hypogoeous, subterranean.
Identification, the determination of the species to which a given specimen belongs.
Identify, to determine the systematic name of a specimen.
Imbricate, overlapped like tiles.
Immarginate, without a distinct border.
Immersed, sunk into the matrix.
Incised, cut out; cut away.
Indehiscent, not opening.
Indigenous, native of a country.
Inferior, growing below; of the ring of an agaric, which is far down on the stem.
Infundibuliform, funnel-shaped.
Innate, adhering by growing into.
Inserted, growing like a graft from its stock.
Involute, edges rolled inward.
Laciniate, divided into flaps.
Lactescent, milk-bearing.
Lacunose, pitted or having cavities.
Lamelloe, gills of mushrooms.
Lanceolate, lance-shaped; tapering to both ends.
Lateral, attached to one side.
Latex, the viscid fluid contained in some mushrooms.
Laticiferous, applied to the tubes conveying latex, as in the Lactarias.
Lepidote, scurfy with minute scales.
Leucospore, white spore.
Ligneous, woody consistency.
Linear, narrow and straight.
Linguiform, tongue-shaped.
Maculate, spotted.
Marginate, having a distinct border.
Matrix, the substance upon which a mushroom grows.
Medial, at the middle; of the ring of a mushroom which is between superior or near the apex of the stem, and distant or far removed from the apex.
Merismoid, having a branched or laciniate pileus.
Moniliform, contracted at intervals in the length, like a string of beads.
Multifid, having many divisions.
Multipartite, divided into many parts.

Mycelium, the delicate threads proceeding from the germinating spores, usually white and popularly termed spawn.
Narrow, of very slight vertical width.
Netted, covered with projecting reticulated lines.
Nucleus, contents of spore.
Obconic, inversely conical.
Obcordate, like an inverted heart.
Oblique, slanting.
Oblong, longer than broad.
Obovate, inversely egg-shaped, broadest at the apex.
Obtuse, blunt or rounded.
Ochrospore, ochre-colored spore.
Orbicular, having the form of an orb.
Order, group, of a classification intermediate between tribe and family.
Ostiole, ostiolum, mouth of the perithecium; orifice through which the spores are discharged.
Ovate, egg-shaped.
Pallid, pale, undecided color.
Papillate, papillose, covered with soft tubercles.
Paraphyses, sterile cells found with the reproductive cells of some plants.
Parasitic, growing on and deriving support from another plant.
Partial, of a veil clothing the stem and reaching to the edge of the cap, but not extending beyond it.
Patent, spreading.
Pectinate, toothed like a comb.
Pedicel, foot-stock
Pedicillate, having a pedicel.
Pelliculose, furnished with a pellicle or distinct skin.
Penciled, with pencil-like hairs either on the tip or border.
Peridium, general covering of a puffball, simple or double, dehiscent or indehiscent at maturity.
Perithecia, bottle-like receptacles containing asci.
Peronate, used when the stem has a distinct stocking-like coat.
Persistent, inclined to hold firm, tenacious.
Pervious, forming an open tube-like passage.
Pileate, having a cap.
Pileoli, secondary pilei; arising from a division of the primary pileus.
Pileus, the cap, receptacle, or one part of a mushroom; other parts are the stem and gills.
Pilose, covered with hairs.
Pits, depressions in cells or tubes resembling pores.
Plumose, feathery.
Pore, orifice of the tubes of polypores.
Poriform, in the form of pores.
Porous, having pores.
Powdery, covered with bloom or powder.
Projecting, the anterior end jutting out beyond the margin.
Proliferous, applied to an organ which gives rise to secondary ones of the same kind.
Pruinose, covered with frost-like bloom.
Pruniform, plum-shaped.
Pubescent, downy.
Pulverulent, covered with dust.
Pulvinate, cushion-shaped.
Punctate, dotted with points.
Pyriform, pear-shaped.
Quaternate, arranged in groups of four.
Receptacle, a part of the mushroom extremely varied in form, consistency, and size, inclosing the organs of reproduction.
Remote, when the margin of the gill comes to an end before reaching the stem.
Reniform, kidney-shaped.
Repand, bent backwards.
Resupinate, of mushrooms spread over the matrix without any stem and with the hymenium upwards; inverted by twisting of the stalk.
Reticulate, marked with cross lines like the meshes of a net.
Revolute, rolled backwards; of the margin of a cap; the opposite of involute.
Rhodospore, rose or pink spore.
Rimose, cracked.
Ring, a part of the veil adhering to the stem of a mushroom in the shape of a ring.
Rivulose, marked with lines like rivulets.
Rubiginous, rust-colored.
Rufescent, reddish in color.
Rugose, wrinkled.
Scabrous, rough on the surface, scaly.
Scarious, shriveled.
Scissile, of two plates lying together, but capable of being separated.
Sclerotoid, hard; a form assumed by the mycelium of certain mushrooms.
Scrobiculate, marked with little pits or depressions.
Separating, becoming detached, as gills from the stem or of gills from their matrix.
Serrate, saw-toothed; indented like a saw.
Sessile, seated without a stalk.

Simple, not branched, divided or connected together.
Sinuate, of a cap with a wavy margin, or of gills where they have a sudden wave or sinus where they reach the stem.
Spathulate or *Spatulate*, spatula-shaped, or spoon-shaped.
Spawn, the popular name for mycelium used in the propagation of mushrooms; that from which the perfect fungus arises, reproducing the parent form.
Species, an organic body, animal or vegetable, having its peculiar characteristics which differ from the bodies belonging to the same genus.
Spheroidal, partaking of the shape of a sphere.
Spores, the reproductive bodies of cryptograms; analogous to seeds. The spore in germinating gives birth to the mycelium.
Sporida, name given by some mycologists to reproductive spores of the mother cell.
Sporophore, name given by some naturalists to the basidia.
Squamose, having scales.
Squamulose, covered with small scales.
Squarrose, rough, with projecting or deflexed scales.
Stoleniferous, applied to a trailing and rooting branch.
Stellate, star-shaped.
Stem, the ascending axis of plants.
Stigmata, applied to the fructification of the hymenomycetes; the slender and delicate supports of the spores on the basidium cell.
Stipe, name applied to the stem of mushrooms.
Stipitate, having a stem.
Straight, the edge plane and even.
Striate, streaked with longitudinal lines.
Strigose, covered with sharp, rigid lines in the form of channels.
Strobiliform, pineapple shape.
Stuffed, of a stem filled with substance of a different texture from its walls.
Sub, commonly employed as a diminutive.
Subiculum, the thready mycelium forming the under layer of the mushroom.
Subulate, awl-shaped; narrowing and tapering from base to apex.
Sulcate, furrowed.
Superior, the upper surface; applied to the ring when near the apex of the stem.
Theca, cell-mother, the protoplasm of which originates by segmentation; a certain number of spores, usually eight, held in suspension in the protoplasm of the theca without being attached to each other or to the cell walls.
Thecaspore, the spore thus encased.
Tomentose, downy, with short hairs.
Torsive, spirally twisted.
Torulose, a cylindrical body swollen and restricted alternately.
Toxic, poisonous.
Trama, the substance proceeding from the hymenophore, intermediate between the plates (central in) of the gills of agarics.
Transverse, crosswise.
Tremelloid, jelly-like.
Truncate, ending abruptly, as if cut short; cut squarely off.
Tuboeform, trumpet-shaped.
Tubercle, a small wart-like excrescence.
Tubular, hollow and cylindrical.
Turbinate, top-shaped.
Typical, agreeing closely with the characters assigned to a group or species.
Umbilicate, having a central depression.
Umbo, the boss of a shield; applied to the central elevation of the cap of some mushrooms.
Umbonate, having a central boss-like elevation.
Uncinate, hooked.
Unequal, short, imperfect gills interspersed among the others.
Universal, used in relation to the veil or volva which entirely envelops the mushroom when young.
Variety, an individual of a species differing from the rest in external form, size, color, and other secondary features, without perpetuating these differences only under exceptional circumstances.
Veil, in mushrooms a partial covering of the stem or margin of the pileus.
Veliform, a thin veil-like covering
Venate, *Veined*, intersected by swollen wrinkles below and on the sides.
Ventricose, swollen in the middle.
Vernicose, shining as if varnished.
Verrucoe, warts or glandular elevations.
Verrucose, covered with warts.

Villose, villous, covered with long, weak hairs.

Virescent, greenish.

Virgate, streaked.

Viscid, covered with a shiny liquid which adheres to the fingers when touched.

Viscous, gluey.

Volute, rolled up in any direction.

Volva, a substance covering the mushroom, sometimes membraneous, sometimes gelatinous; the universal veil.

Walnut brown, a deep brown like that of some varieties of wood. (Raw umber, and burnt sienna and white.)

Wart, an excrescence found on the cap of some mushrooms; the remains of the volva in form of irregular or polygonal excrescences, more or less adherent, numerous, and persistent.

Zone, a broad band encircling a mushroom.

Zoned, furnished with one or more concentric circles.

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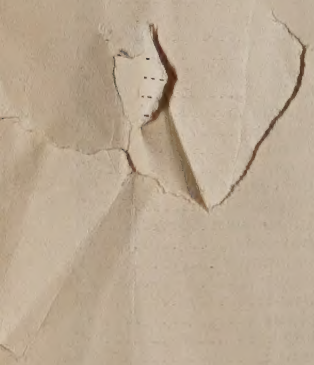
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